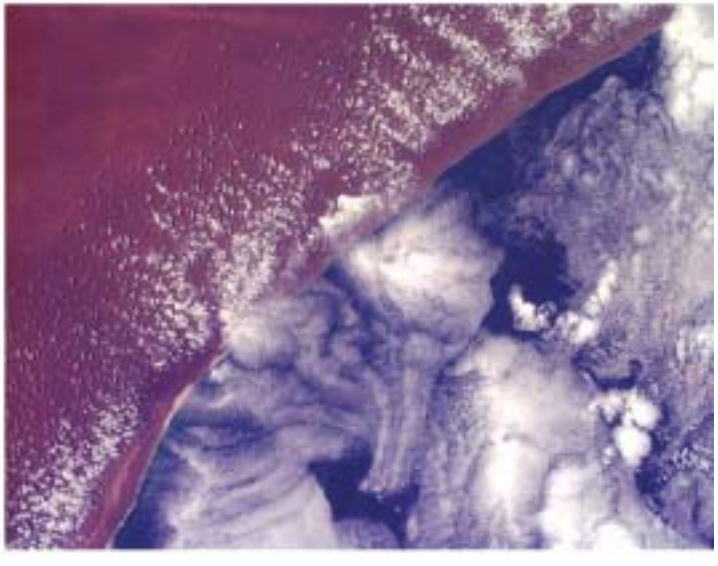
National Aeronautics and
Space Administration

Cloud Patterns



National Aeronautics and Space Administration

Cloud Patterns

Location: Earth limb
Latitude: N/A
Longitude: N/A
Image Dimensions: N/A
Date: October 4, 1997
Image ID #: STS086.ESC.08150528

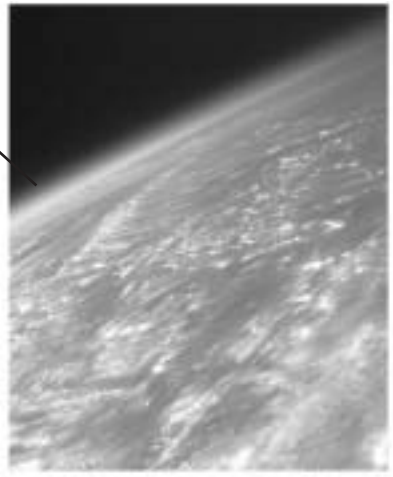
Location: Trinidad
Latitude: 10.52˚ N
Longitude: 62.32˚ W
Image Dimensions: 143.2 x 214.2 km
Date: March 23, 1996
Image ID #: STS076.ESC.01080335

Location: Amazon
Latitude: 1.79˚ S
Longitude: 53.47˚ S
Image Dimensions: 143.1 x 214.1 km
Date: March 23, 1996
Image ID #: STS076.ESC.01080736

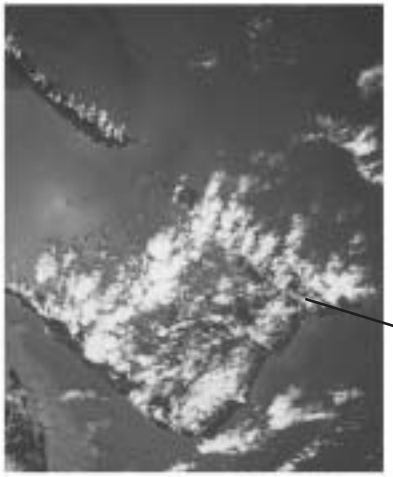
Location: Australia
Latitude: 31.75˚ S
Longitude: 129.69˚ E
Image Dimensions: 148.0 x 223.8 km
Date: February 6, 2002
Image ID#: ISS004.ESC1.037034727

a. Earth limb (outer edge of Earth when it appears as a disk against space)

STS086.ESC.08150528



STS076.ESC.01080335

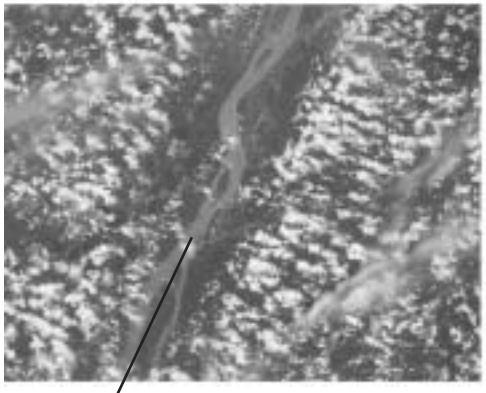


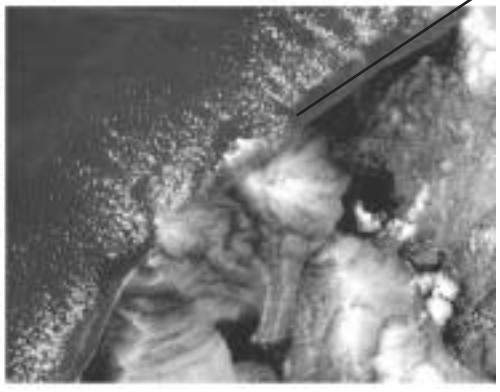
Can you tell which way the wind is blowing?

What do different types of clouds look like from space?

b. Trinidad

d. Australia





c. Amazon River

STS076.ESC.01080736

ISS004.ESC1.037034727

What properties of land and water influence cloud formation?

Interactions between Earth surface features and the atmosphere influence the formation of clouds. Clouds develop when moist air cools below its dew point to form droplets of water or ice.

The top left image is a high oblique view of clouds over water. The 100- to 120-kilometer thickness of Earth's atmosphere is visible along the Earth limb (a). In the top right image of Trinidad (b), clouds form over land as heating from the Sun causes the uplift of air moistened through the processes of transpiration and evaporation. This image also shows a classic sea breeze in which cool air from the ocean blows in over the land to fill the low pressure created by the uplifting of warm air. In the bottom left image of the Amazon River (c), clouds form over densely vegetated zones because of transpiration and heating, but not over the river because water remains relatively cool. Two distinct layers of clouds are visible in the bottom right image of Australia (d). A sea breeze moving from the ocean onto the warmer land is contributing to the formation of the low clouds over land.

Additional information:
ISS EarthKAM images and lessons:
http://www.earthkam.ucsd.edu
NASA Spacelink:
http://spacelink.nasa.gov

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